



Ecommerce

Re-Platforming Basics

AS COMPANIES AND THEIR CUSTOMERS OUTGROW PREVIOUS-GENERATION ONLINE PLATFORMS, DECISIONS MADE TODAY WILL IMPACT BUSINESS RESULTS FOR YEARS TO COME.

Over the past decade, buying patterns and technology advances have radically altered business goals and competitive realities. Consumers demand faster, more engaging shopping experiences across multiple channels—in-store, of course, but increasingly also mobile and online. And the impact of a negative customer experience is significant: One Google survey reveals that more than half (52%) of consumers are less likely to engage with a business after a single bad mobile experience.ⁱ If a customer has to wait longer than a split second for a webpage to load, or if that site cannot deliver a rich, multichannel experience, that customer could be lost forever. Already, many retailers are realizing that their current platforms are no longer suited to their demanding digital customers' needs, not to mention their own.

Given the project scope and the potential consequences, re-platforming may seem daunting. This guide offers valuable insights into re-platforming, including how to determine if it's time to make a move, what factors need to be considered to ensure success, and which common architectures meet the needs of most enterprises.



Custom Solutions Group

KNOWING WHEN THE TIME IS RIGHT

According to a recent Forrester Research survey, more than half of ecommerce executives (54%) say re-platforming is their top priority over the next 12 months.ⁱⁱ That's not surprising, given another Forrester surveyⁱⁱⁱ that indicates that 81% of online retailers are currently using a self-built or licensed on-premises solution, yet 74% fear their existing solutions won't scale with their growth plans. And almost half (46%) of retailers report difficulty hiring the staff needed to manage their licensed platform or to continually tweak their internally built ecommerce platform. Ultimately, this means organizations are expending significant time and effort keeping up with market demands and running the underlying infrastructure.



The evolution of traditional retail into digital channels highlights the need for performance. The infrastructure required to deliver the digital experience is becoming increasingly complex, with demands for enhanced usability, responsiveness, and agility. This is occurring at a time when resources are spread thin across the organization, driven by demands like big data, internal user needs, and disaster recovery. Trying to push into the new digital reality with older systems results in sluggish performance and widespread inefficiency.

Most ecommerce stores re-platform every two to three years.^{iv} However, the timeline for re-platforming will vary based on the retailer's unique customer experience and performance goals. Re-platforming an ecommerce operation is a huge undertaking, encompassing both components of the ecommerce store:

- ▶ **Evaluating the ecommerce platform:** Can the current platform support future initiatives, or is it hindering existing plans?
- ▶ **Evaluating the hosting solution:** Should the organization maintain an in-house platform, move everything to a service provider, or employ a hybrid solution?

Both elements are equally important to an ecommerce store's success. Putting a resource-heavy ecommerce platform on subpar infrastructure can be just as disastrous as a restrictive ecommerce platform on enterprise-level metal.

TIME FOR ACTION

In the face of the changing behavior of buyers, existing ecommerce sites may be exhibiting signs that their glory days are behind them. Signs to look for include:

- ▶ Unacceptable response times or frequent outages
- ▶ Inability to keep up with competitors' functionality
- ▶ Stalled omnichannel sales strategies caused by inadequate integration between channels
- ▶ Difficulty complying with industry and government compliance mandates
- ▶ Cost-prohibitive improvements needed to fix gaps in the system

Organizations may face new requirements that didn't exist or that have changed markedly from when the [ecommerce platform](#) was built. As the product catalog grows, database requirements may change. An increase in concurrent users influences Web server size and configuration. Operating in a global environment may require the ability to [localize content](#), display and handle transactions in the buyer's local currency, and manage local compliance requirements.

Ecommerce operations dealing with physical and digital products or software-as-a-service offerings have different considerations than a pure online product retailer. Furthermore, they may need multiple types of payment capabilities, ranging from one-time to subscription-based models. Just as important as billing methods are the requirements for dealing with renewals, expired cards, refunds, and channel issues such as affiliate marketing commissions.

Of course, any organization considering an ecommerce re-platforming project must account for momentous changes in mobile



TOP 5 REASONS CITED FOR ECOMMERCE PLATFORM REPLACEMENT:^v

- 58%:** To improve business agility
- 56%:** To lower overall operational and ownership costs
- 51%:** To align the cost of ownership against our online revenues
- 51%:** To support our multichannel initiatives
- 51%:** To speed up deployment of new features and functionality

and social media technologies that have occurred since the previous platform was implemented. By 2017, eMarketer predicts, nearly 80% of digital buyers will be shopping on a mobile device, with sales from tablets representing nearly 70% of purchases.^{vi} Recently, Facebook ad click-through rates ballooned to 275% while cost-per-click dropped 40%, making social selling another vital imperative to consider in the re-platforming process.^{vii}


Once the need to re-platform is acknowledged, it's critical to establish project goals. But in order to develop those goals, the team must craft a strategy appropriate for the company's unique business needs and consider the demands of multiple stakeholders. Business leaders may be focused on issues such as conversion rates and customer retention, while technologists may be more concerned with security, compliance, and performance. And, of course, there is the customer, who wants fast access to quality content and ease of completing a transaction.

A successful project balances those goals. "Ultimately, the issue of re-platforming an existing ecommerce system comes down to determining the investment required to meet the organization's goals. There is more to cloud economics than the oft-touted 'convert CAPEX to OPEX,'" explains [Mahesh Gandhe, senior solution marketing manager at Rackspace](#).

Chris Vitale, director of ecommerce at [Pep Boys](#), describes the tangible, future state that most retailers are pursuing but can only attain by re-platforming their systems: "We're going to have a multi-channel experience where someone interacts with us online, an expectation is set, then they continue through to the store and have an entire, almost traditional, in-store experience with us."

ECOMMERCE PLATFORM SELECTION

The ecommerce platform consists of the software used to manage the look and feel of the site, inventory, payment processes, and so on. The platform selection is a critical driver of the hosting choice, so there is a lot to consider. This list offers a foundation for platform requirements, although additional concerns unique to the business will undoubtedly be uncovered during the selection process.



TOP ECOMMERCE PLATFORMS

1. Oracle	3. GSI Commerce/eBay
2. Magento	4. IBM ^{viii}

- ▶ **PRODUCT MERCHANDISING:** Controlling how products and information are displayed, and how discounts are presented to the customer and processed in a payment system; presenting product customization requirements; displaying global product content.
- ▶ **DATA COMPATIBILITY:** Parsing of multiple data points simultaneously for a split-second redirect to dynamic pages or to deliver custom content, allowing incompatible data types or data stored in silos to “talk” to each other, not hindering customer experience initiatives.
- ▶ **PAYMENT SYSTEM:** Supporting trials with opt-in/opt-out capability, physical product purchasing, access management for SaaS products, support for global payments, shopping cart compatibility.
- ▶ **CHANNEL MANAGEMENT:** Features to differentiate customer segments, serve dynamic content based on customer profile, price list management to offer alternative pricing to selected customers, global compliance management.
- ▶ **MOBILE FUNCTIONALITY:** Creating high-impact mobile interfaces across smartphones and tablets, real-time processing, mobile shopping cart optimization.
- ▶ **MARKETING:** Tools for customer contact testing, multivariate testing capabilities, acquisition/retention marketing (PPC campaigns, SEO, email list management), support for affiliate programs.
- ▶ **CUSTOMER CONTACTS:** Ability to customize and send transactional emails for account creation, order-related contacts, localized content, new product versions.
- ▶ **HOSTING MANAGEMENT:** Access to scalable, dedicated bare-metal components; implementing cloud expandability for bursting; meeting PCI compliance; building in redundancy for disaster recovery.

HOSTING SELECTION

Every company has unique business and IT requirements, and there are many solutions that may be a good fit. Sometimes, the best configuration for a business includes more than one option. When evaluating hosting options, it’s important to consider whether potential integration and deployment issues are aligned with the organization’s IT resources and experience. There’s a huge difference between a general cloud provider that only offers raw infrastructure—leaving organizations to figure out how to deploy and connect the ecommerce platform—and hosting specialists that can provide expertise around unique workloads. Choosing a hosting partner with specialized experience in ecommerce platforms and infrastructure

helps the organization sort out the complexities to architect an optimal solution.

Organizations should review their options against their strategy to choose the right combination. Options include:

- ▶ **CLOUD:** Takes advantage of massively scalable infrastructure and preconfigured or highly customizable environments to reduce hardware and management burdens. Choose a [public cloud](#) for low cost or a [private cloud](#) for workloads subject to stringent security or compliance mandates.
- ▶ **ON-PREMISES:** Puts the burden of hardware, security, performance, and scale on the IT team and budget. This option delivers ultimate control—as well as all the headaches that accompany being responsible for the entire ecommerce infrastructure.
- ▶ **HYBRID:** Combines on-premises or dedicated hardware with the resources to achieve cloud efficiencies while meeting certain security or compliance needs. In a [hybrid cloud environment](#), a retailer can move certain workloads, like email or content delivery, to the cloud while maintaining control over other critical systems best run on dedicated or on-premises equipment.



MAKING THE MOVE

Based on the knowledge and expertise gained while serving some of the top retailers in the United States, [Rackspace Digital](#), a practice specializing in [content management](#), [mobile](#), and [ecommerce](#) hosting, has developed four reference architectures for ecommerce solutions built on [Magento](#) or [Oracle Retail](#):

- ▶ **BASIC:** A pure cloud configuration with both Web server and database residing in the cloud, with the ability to add Web and database servers for scalability.
- ▶ **INTERMEDIATE:** A three-tier, cloud-based architecture using dedicated servers for both Web and database servers. Single Web and database servers are segmented behind a physical firewall, and customer credit card information is stored using the third-party payment gateway.
- ▶ **ADVANCED:** A three-tier, hybrid (cloud + dedicated) architecture that relies on transactional data stored in dedicated servers behind a physical firewall, with the ability to burst into cloud servers for holiday spikes or sudden increases in load.
- ▶ **PREMIER:** A three-tier, self-contained, PCI-capable hybrid (cloud + dedicated) architecture designed to support the highest number of online transactions using a resilient, highly available infrastructure with failover capabilities at every layer of the solution.

WHAT IS RACKSPACE DIGITAL?

Best practices, architecture guidance, and proactive support for leading digital platforms around:

- ▶ **WEB CONTENT MANAGEMENT SYSTEMS:** Application and infrastructure hosting expertise for leading WCMS platforms including WordPress, Drupal, Sitecore, Adobe, and Ektron.
- ▶ **ECOMMERCE SOLUTIONS:** Open, hybrid infrastructure and services for building secure, scalable, and highly available ecommerce stores built on Magento, Oracle Commerce, hybris, and Intershop.
- ▶ **MOBILE SERVICES:** Flexible, mobile infrastructure and application platform hosting expertise in Node.js, FeedHenry, and Mutual Mobile for highly scalable, reliable mobile experiences.

"I can't think of a scenario where the 'all-on-premise' solution would be optimal," says Gandhe. "With that option, you either have to provision for the peak periods—meaning you're overinvesting in capacity for the other periods—or you provision for normal day-to-day traffic and risk being unable to meet spikes in demand."

Steve Vitale, director of ecommerce at Spencer Gifts, echoes Gandhe's statement: "Our traffic and business can increase 100 times to 1,000 times what they were in the off-season. We have to scale on and off, but we also have to try not to carry too much infrastructure in the off-season. That's why we went with the [Rackspace Hybrid Cloud](#) based on [RackConnect](#). We split our application between a dedicated private infrastructure for our checkout process, and we use the public cloud for product descriptions, prices, and other information."

BRINGING IT ALL TOGETHER

An online store is a company's window to the world. It needs to stand up to daily traffic and unexpected spikes, while offering customers a safe and secure place to shop.

A core component, of course, is enabling customers to make purchases using credit cards. If the number of credit card transactions is relatively small, a third-party payment gateway is economical and may be the best option. If credit card transaction volume is very high, though, it may be more cost-effective to store credit card information in the data center of a service provider that can meet [PCI compliance](#) requirements.

Catalog display logic and shopping cart logic may both reside on the same server, in a two-tier architecture: The first tier is composed

of a combined Web and application tier; the second, a database layer. Another approach is a three-tier architecture. In this case, the Web layer is the first tier, the app layer is the second, and the database layer is the third.

"We generally find that ecommerce operations start with a two-tier architecture, then, as the business grows, they start separating two layers so that each tier can scale independently," explains Gandhe. "Deciding between a two-tier and a three-tier reference architecture really depends on scalability needs for the catalog display and shopping cart."

Display logic and shopping cart logic can either run on [cloud servers](#) or [dedicated servers](#). Cloud is both persistent and highly elastic, with speedy provisioning to scale on demand. Dedicated servers, on the other hand, provide a single-tenant environment for exclusive usage.

The type of database and volume of I/O transactions will dictate which database technology is right for an ecommerce operation. "[Cloud databases](#) are the best option if you want to use a MySQL database and want Rackspace to manage it for you," says Gandhe. "If you want to use a database that supports virtual environments, then you can run your own database on [cloud servers](#). If your database of choice doesn't support virtualization, or for the highest I/O performance, we recommend running your database on a dedicated server."

CONCLUSION

Ultimately, re-platforming an ecommerce system comes down to determining the investment required to meet the business goals. Factors such as the pattern of demand, [total cost of ownership](#), and transformation costs need to be considered in any financial analysis of a potential solution. Choosing the ecommerce platform software balances the cost of licensing and management against the benefit of instant access to the tools needed to build and grow a competitive site. Sufficient variability in demand is required to realize cost savings using a public cloud hosting model; flat workloads are cheaper on dedicated infrastructure over a fixed contract term.

Transforming infrastructure can be costly and time-consuming, and relying on internal skills may not be ideal. "In almost all cases, I'd strongly recommend that a company approaching the re-platforming stage look into working with a partner that is able to apply skills and resources that are likely in short supply internally," says Gandhe. ■

LEARN MORE ABOUT RACKSPACE DIGITAL SOLUTIONS AT GO.RACKSPACE.COM/DIGITAL

ⁱ <http://googlemobileads.blogspot.com/2012/09/mobile-friendly-sites-turn-visitors.html>

ⁱⁱ http://blogs.forrester.com/peter_sheldon/13-08-01-commerce_technology_continues_its_bull_run

ⁱⁱⁱ [Understanding TCO When Evaluating Ecommerce Platforms](#), 2012, Forrester Research.

^{iv} [Understanding TCO When Evaluating Ecommerce Platforms](#), 2012, Forrester Research.

^v [Understanding TCO When Evaluating Ecommerce Platforms](#), 2012, Forrester Research.

^{vi} www.emarketer.com/Article/Smartphones-Tablets-Drive-Faster-Growth-Ecommerce-Sales/1009835

^{vii} http://success.adobe.com/assets/en/downloads/whitepaper/13926_di_social_sentiment_v10.pdf

^{viii} www.internetretailer.com/2014/01/10/top-e-commerce-platform-vendors-midmarket-retailers

About Rackspace

Rackspace® Hosting (NYSE: RAX) is the open cloud company, delivering open technologies and powering hundreds of thousands of customers worldwide. Rackspace provides its renowned Fanatical Support® across a broad portfolio of IT products, including Public Cloud, Private Cloud, Hybrid Hosting and Dedicated Hosting. The company offers choice, flexibility and freedom from vendor lock in.

GLOBAL OFFICES

Headquarters Rackspace, Inc.

5000 Walzem Road | City of Windcrest, San Antonio, Texas 78218 | 1-800-961-2888 | Intl: +1 210 312 4700
www.rackspace.com

UK Office

Rackspace Ltd.
5 Millington Road
Hyde Park Hayes
Middlesex, UB3 4AZ
Phone: 0800-988-0100
Intl: +44 (0)20 8734 2600
www.rackspace.co.uk

Benelux Office

Rackspace Benelux B.V.
Teleportboulevard 110
1043 EJ Amsterdam
Phone: 00800 8899 00 33
Intl: +31 (0)20 753 32 01
www.rackspace.nl

Hong Kong Office

9/F, Cambridge House, Taikoo Place
979 King's Road,
Quarry Bay, Hong Kong
Sales: +852 3752 6465
Support +852 3752 6464
www.rackspace.com.hk

Australia Office

Level 4, 210 George Street,
Sydney, NSW 2000
Phone: 1-800-722577
www.rackspace.com.au

© 2014 Rackspace US, Inc. All rights reserved.

THIS DOCUMENT IS FOR INFORMATIONAL PURPOSES ONLY AND IS PROVIDED "AS IS." THE INFORMATION SET FORTH IN IS INTENDED AS A GUIDE AND NOT AS A STEP-BY-STEP PROCESS, AND DOES NOT REPRESENT AN ASSESSMENT OF ANY SPECIFIC COMPLIANCE WITH LAWS OR REGULATIONS OR CONSTITUTE ADVICE. WE STRONGLY RECOMMEND THAT YOU ENGAGE ADDITIONAL EXPERTISE IN ORDER TO FURTHER EVALUATE APPLICABLE REQUIREMENTS FOR YOUR SPECIFIC ENVIRONMENT.

Rackspace is either a registered service marks or service marks of Rackspace US, Inc. in the United States and other countries.

Third-party trademarks and tradenames appearing in this document are the property of their respective owners. Such third-party trademarks have been printed in caps or initial caps and are used for referential purposes only. We do not intend our use or display of other companies' tradenames, trademarks, or service marks to imply a relationship with, or endorsement or sponsorship of us by, these other companies.